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WILSON SONSINI GOODRICH & ROSATI 650 PAGE MILL ROAD PALO ALTO, CA 94304-1050			ART UNIT 2192	PAPER NUMBER

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/848,770

Applicant(s)

LOOS ET AL.

Examiner

J. Derek Rutten

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/19/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to Applicant's submission filed 5/2/06, responding to the 11/2/2005 Office action which detailed the rejection of claims 1-26. No claims have been amended, canceled, or added. Claims 1-26 remain pending in the application and have been fully considered by the examiner.
2. Applicant has essentially argued that the rejections under U.S.C. 35 § 103(a) is improper. These arguments are not persuasive as set forth below.
3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Response to Arguments

4. On page 7 of the response filed 5/2/2006, Applicant essentially argues that the "specification of separate Applications, Data Models and Integration Components" in Figure 2 shows that the data model is "obviously decoupled." However, this does not appear to be

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obviously decoupled since Figure 2 merely displays the text “Data Models” grouped together along with “Applications”, “Integration”, and “Components”. There does not appear to be any indication regarding the “Data Models” as being decoupled.

Likewise, element 316 in Figure 3 merely shows that a data model is deployed. There is no indication that the data model is decoupled. Simply listing a data model separately from another component does not particularly show that it is decoupled. Further, the “update of data models as a separate step (412)” in Figure 4 also does not provide any particular indication of the decoupled nature of the data model. Applicant asserts that each step shown in Figure 4 was “drawn separately at least to show how they are decoupled from one another”. However, review of page 16 lines 1-8 of the originally filed specification shows that the word “decoupled” only appears to be used tangentially in reference to the data model mentioned in step 412, and is not used at all in reference to the other steps in Figure 4. As such, it does not appear that Figure 4 particularly shows the decoupled nature of the data model.

Applicant continues on page 8 to describe the usage of rules shown in Figure 4 and the support for a decoupled data model allegedly shown in on pages 20 and 27 of the related provisional application. However, these arguments do not appear to further provide support for the objection to the drawings to show the decoupled mobile data model (claims 1, 11, 17, 22, and 24), a mobile data model “operable to enable changes in data structure and data handling without requiring programmatic changes” (claim 11), the “changes to the mobile data model <that> effect changes in system data descriptions and rules governing data handling without requiring programmatic changes in applications included in an enterprise back-end device” (claim 17), and the “mobile data model decoupled from a particular client interface and enterprise data

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source” (claim 24). Applicant’s arguments are not persuasive. Accordingly, the objection to the drawings is maintained.

5. On pages 9-11, Applicant addressed the rejection of claims 11-16 under 35 U.S.C. 112, 1st paragraph.

On pages 9-10, Applicant essentially argues that support a “mobile data model ... operable to enable changes in data structure and data handling without requiring programmatic changes in the enterprise back end” is found on page 16 lines 14-15 and page 17 lines 2-3. However, while these passages may state that the data model can be changed, it still does not address how the mobile data model is "operable" to enable change without requiring programmatic changes. To the contrary, the passage cited by Applicant suggests that a data model is changed when application requirements change. A change of application requirements implies programmatic change. The portion of the originally filed specification cited by Applicant still does not appear to describe how this is accomplished. Therefore, Applicant's argument is not persuasive.

Further on page 10, Applicant essentially argues that use of the term “portions” is used to show that certain clients or backend connections may be interested only in a portion of the data model, and that it “should be fairly obvious” that if someone changed those portions not deployed, then code wouldn’t have to change as discussed on page 30 lines 7-8 of the originally filed specification. However, it is not clear exactly what code wouldn’t have to change. The term "portion" suggests that a subset of the data model is instantiated. A subset of a data model is not the same as a data model that is "operable" to *enable changes in data structure and data handling*. Rather, the portion would simply restrict which data structures and data handling

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would be provided. There does not appear to be a description of how the use of “portions” enables changes in data structure and handling without requiring programmatic changes.

Applicant has not pointed out any portion of the specification that describes a data model that is operable to enable changes.

On pages 10-11, Applicant continues the previous argument by pointing out that different components in the system reference different portions of the data model, and that “it should be obvious” that one could change a portion of the data model that hadn’t been deployed without changing “these components.” However, this argument is unclear since limitations in question refer to the “enterprise back end”, and the “components” appear to refer to client components. Accordingly, this argument is not persuasive.

Applicant concludes the previous line of arguments on page 11, essentially asserting that disclosure on page 37 line 19 – page 38 line 2 shows the ability to deploy new classes to a select group of users that “obviously would obviate the need for any programmatic changes.” Here, the mobile data model appears to change. It is still not clear how it is “operable” to enable changes to data structure and data handling *without* programmatic changes. It does not address any programmatic changes that might be necessary for any “new users”. While this might show that the mobile data model may be changed, it does not address how the adaptability of the mobile data model precludes the changing of the back end.

The above arguments are not persuasive. Accordingly, these rejections are maintained.

6. On pages 11-13, Applicant addressed the rejection of claims 17-21 under 35 U.S.C. 112, 1st paragraph.

At the bottom of page 11, Applicant suggests that claim 17 was rejected since the data model is not “operable”. However, this limitations appears to have been addressed in regard to claim 11, not claim 17 as suggested by the Applicant (see top of page 6 of the Office action mailed 11/2/2005). Regardless, Applicant essentially argues that the data model is “operable” since it is used to instantiate a data store. However, the term “data model” is commonly used to refer to the abstract organization of data. From Wikipedia: “A data model is a model that describes **in an abstract way** how data is represented in a business organization, an information system or a database management system.” (<http://en.wikipedia.org/wiki/Data_model>, accessed 8/7/2006, emphasis added). This definition appears to correspond with the use of the term “data model” in the originally filed specification. If a data model is an abstract definition, it is not clear how it could be *operable*. While an abstract definition of a data model might be *useful*, it is not strictly speaking, *operable*. Therefore, this argument, interpreted in connection with the rejection of claim 11, is not persuasive.

On pages 12-13, Applicant essentially argues that there is full disclosure regarding “rules governing data handling”. While it is agreed that the "conditional logic statements" as disclosed on page 25 lines 13-18 can be regarded as the "rules governing data handling", Applicant has not pointed out any description from the originally filed specification of how a change in the data model "effects" changes to the rules. Therefore, this argument is not persuasive and the rejection is maintained.

7. On pages 14-18, Applicant argues that the rejection of claims 1-26 under 25 U.S.C. § 103(a) is improper since there is not motivation to combine, and that Wright teaches away. These arguments are not convincing as addressed below.

On pages 14-16, Applicant essentially argues that since Wright teaches away from Wadhwa since Wright teaches platform independent applications development, and Wadhwa teaches platform dependent development. However, this analysis is misplaced for at least the fact that platform independent vs. platform dependent development is a systems issue, while the references are more concerned with the application level. Wadhwa teaches that data stored in a repository using an entity relationship model can be readily reused. Platform independence/dependency is a separate issue from data reuse.

On pages 16-18, Applicant essentially argues that Wright already discloses the use of a virtual machine to permit the reuse of applications in a heterogeneous computing environment, and therefore would have no motivation for the reuse of data supplied through Wadhwa's data model. However, as addressed above, the use of a virtual machine is a systems level concept that does not address data model concerns. Just because an application can run on several different platforms, it does not preclude the need for reusable data as taught by Wadhwa.

8. On pages 18-21, Applicant essentially argues that there is not motivation to combine Wadhwa with Bowman-Amuah and that Bowman-Amuah teaches away from Wadhwa. These arguments are not persuasive as addressed below.

On pages 19-20, Applicant essentially argues that Bowman-Amuah does not teach a decoupled data model, but rather "de-coupled communication" using a "shared format". However, Bowman-Amuah's decoupled communication is precisely what decouples the data model. The language of the claims simply call for a data model that is "decoupled from a particular interface", which is provided by Bowman-Amuah's data model using de-coupled communication.

On pages 20-21, Applicant essentially argues that Bowman-Amuah teaches away from Wadhwa since Bowman-Amuah seeks to avoid the same problems that Wadhwa acknowledges as drawbacks. Applicant notes Wadhwa's teaching against numerous system changes (Wadhwa column 17 lines 1-4). It appears that this is precisely the reason that one of ordinary skill in the art would look to Bowman-Amuah. Bowman-Amuah teaches a solution to the expressed problems of Wadhwa (see Bowman-Amuah column 237 lines 7-9: "In cases like this, it would be better to implement a communication mechanism or "shared format" that can better handle changes to the system.").

9. On pages 21-25, Applicant essentially argues that Wright and Wadhwa fail to disclose, teach or otherwise suggest the claimed data model. These arguments are not persuasive as addressed below.

On page 21-22, Applicant essentially argues that Wadhwa teaches *only* data relationship, and does not address data elements, data dependencies, and data attributes. However, it is noted that the claims use the alternative "one or more" to provide these limitations. As pointed out in the previous Office action, disclosure of one of these elements meets the language of the claim.

On pages 22-23, Applicant essentially argues that Wadhwa uses persistent connections while Applicant's invention is directed to asynchronous communication. On page 23, Applicant essentially argues that the references do not teach "random connections, concurrently, and other issues that accompany the remote computing system". It is noted that these feature upon which applicant relies, are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

On pages 23-24, Applicant essentially argues that Wadhwa does not disclose distribution attributes. However, as noted above, this limitation was provided using the alternative language “one or more” and was not required to meet the language of the claim.

On pages 24-25, Applicant essentially argues that Wadhwa’s data model is not “actively employed accessed or otherwise leveraged...” Applicant supports this argument by quoting Wadhwa column 7 lines 24-25: “The entity-relationship model is not the actual program”. Applicant further suggests that Wadhwa’s data model is not required or actively employed in interfacing applications since it is the modules that are active, and not the data model. However, as addressed above, a data model is an abstract definition of data. Wadhwa’s modules use the elements defined by the data model. Such elements are required and active in interfacing applications. Applicant has not pointed out an enabling description of an “operable” data model.

10. For convenience, the following objections and rejections are included in their entirety from the previous Office action.

Drawings

11. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the decoupled mobile data model (claims 1, 11, 17, 22, and 24), a mobile data model “operable to enable changes in data structure and data handling without requiring programmatic changes” (claim 11), the “changes to the mobile data model <that> effect changes in system data descriptions and rules governing data handling without requiring programmatic changes in applications included in an enterprise back-

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end device” (claim 17), and the “mobile data model decoupled from a particular client interface and enterprise data source” (claim 24) must be shown or the feature(s) canceled from the claim(s). While the drawings show a data model (Figures 12, 13, etc.), they do not show a *decoupled* data model. In particular, claims 1, 11, 17, and 22 describe a mobile data model in terms of it being “independent”. Claim 24 describes decoupling in terms of “a particular client interface and enterprise data source”. Particularly with respect to Applicant’s arguments (page 9 paragraphs 1, 3) that Wright does not teach a decoupled mobile data model that is “defined explicitly and separately from client programs”, such claim limitations that define the instant invention over the prior art should be illustrated. None of the drawings show such features of a mobile data model. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 11-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

14. Claim 11 recites "...wherein the mobile data model is ... operable to enable changes in data structure and data handling without requiring programmatic changes in the enterprise back end..." However, the originally filed specification does not provide support for these limitations. In contrast, page 16 line 16 – page 17 line 3 recites:

Once a mobile data model has been built, the developer can build one or more software program components that will operate on the server side of the mobile computing system in order to integrate the mobile computing system with one or more enterprise back-end applications, at step 416. These components, or software instances, may be built using a variety of programming languages, depending on the systems in question. These components may facilitate the transfer of data to and from enterprise systems as application requirements dictate. Each integration component may access application programming interfaces (APIs) provided by the mobile computing system in order to access a desired information instances. As application requirements change, the developer may enhance the integration components as needed.

This paragraph appears to teach that a mobile data model is built before server or integration components can be built, and that if requirements change, the integration components may be

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changed. If this interpretation is correct, then it would be the integration components that “enable changes”, not the mobile data model as recited in claim 11. Further description is found on page 34 line 14 – page 35 line 2:

As mentioned above, there may be three phases a developer will complete when developing a mobile domain solution: (1) create a mobile data model that may allow instantiation of a domain data store and a mobile data store; (2) write an integration component that facilitates communication between a domain data store and a back-end application; and (3) write a client-side or mobile device bound mobile application that support interaction between a mobile data store and a user. In effect, the mobile data model may provide a layer of abstraction between a back-end database and a mobile application. As such, an integration component may access a domain data store instantiated from a mobile data model or a portion thereof, and a mobile applications may access a mobile data store instantiated from the same mobile data model or a portion thereof on an individual hand-held device.

According to this passage, the mobile data model itself does not appear to be “operable” as recited in claim 11. Rather, the mobile data model allows an instantiation in the form of a data store that would then interface with an integration component (item 2 above) or a mobile application (item 3 above). Any change in the data model would likely require a new instantiation of the data store, and it would seem that any change in the data store would further require modification to any associated integration components or applications. However, the specification appears to be silent in regards to the ability to change the mobile data model without requiring programmatic changes as recited in the claim.

15. Claims 12-16 are rejected as being dependent upon a rejected base claim.

16. Claim 17 contains recites “...changes to the mobile data model effect changes in system data descriptions and rules governing data handling without requiring programmatic changes in applications included in an enterprise back-end or mobile device.” However, as addressed in the above rejection of claim 11, the specification appears to be silent on the requirements of programmatic changes in response to changes to the mobile data model. Further the specification does not expressly recite “data descriptions” or “rules governing data handling”,

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and applicant has not particularly pointed out where these limitations find support in the originally filed specification. Reference to “Fields” used “to describe attributes” is found on page 29 lines 19-20. However, these field descriptions used in the data model do not appear to affect any such “system data descriptions”. Further, while the specification refers to “rules in the system dictate” (page 13 lines 19-21, and page 13 lines 1-4), reference to “rules governing data handling”, as recited in the claim, was not found in the specification. Page 24 line 7 also refers to a “rules-processing engine”. This engine appears to respond to transactions, but the specification does not mention any change in the rules engine in direct response to a change in the mobile data model.

17. Claims 18-21 are rejected as being dependent upon a rejected base claim.

18. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

19. Claims 11-21 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which Applicants regard as their invention. Evidence that claims 11-21 fail to correspond in scope with that which Applicants regard as the invention can be found in the reply filed 9/15/05. On page 10, paragraph 1 of the response, Applicant argues that the present invention allows alterations to be made “without significant supplementary programming”. However, claim 11 recites “without requiring programmatic changes in the enterprise back end”. These two statements appear to conflict. The phrase “without significant supplementary programming” implies that some amount of supplementary programming is required, but the claim language says that no supplementary programming is required. In light of Applicant’s comments, it is not clear if any supplementary programming would or would not be required,

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and the originally filed specification does not appear to address the issue. Claim 17 contains language similar to claim 11, and is rejected for the same reasons. Claims 12-16 and 18-21 are rejected as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record U.S. Patent 5,857,201 to Wright et al. (hereinafter referred to as "Wright") in view of U.S. Patent 5,295,222 to Wadhwa et al. (hereinafter "Wadhwa") in view of U.S. Patent 6,332,163 to Bowman-Amuah (hereinafter "Bowman-Amuah").

As per claim 1, Wright discloses:

A method for use of a software application (column 13 line 1 – column 14 line

15), *the method comprising:*

creating a mobile data model, the mobile data model ... required by a mobile

application See column 5 lines 49-52:

The FL Engine 160 incorporates a full local database implementation that allows data to be manipulated and collected by the FL client while not connected to the FL server 132.

instantiating at least a portion of the mobile data model to create a mobile data

store containing enterprise information column 2 lines 24-26:

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The client/server (C/S) architecture of the present invention is designed to allow the client to become a **direct extension of the corporate data sources**.

also column 2 lines 50-58:

...in a computer network, including a server, a data source, and a mobile client having a database, a method of synchronizing the client database and data source during a non-persistent connection, the method comprising the steps of connecting the mobile client to the server; manipulating the **client database** by the server; updating the **data source** responsive to the manipulation by the server; and disconnecting the client from the server.

creating one or more mobile software applications to interact with the mobile

data store column 2 lines 34-38:

Applications built with existing development tools can be enabled to either **exchange data** on demand, or provide facilities for a multi-port server allowing remote database access and e-mail access from the field.

making the mobile software application and at least a portion of the mobile data

model available to a consumer In Wright, a consumer can be considered a PDA, which functions as the client in the client/server architecture disclosed. As such, the application and data model are inherent to the function of the system, since without availability to them, the system loses its primary functionality.

Wright also does not expressly disclose a data model *explicitly describing one or more data elements, data relationships, data dependencies and data distribution attributes wherein the mobile data model is an independent entity...* However, in an analogous environment, Wadhwa teaches that an independent data model that defines at least data relationships can be used for generation and distribution of applications. See column 6 lines 59-63:

An association between entities is known as a relationship. For example in FIG. 3 the entity, Organization 1, is now linked to the entity, Employee, by the relationship, Employs 3. Relationships are also defined by attributes.

Applicant's use of alternative language in the claim, i.e. "one or more" allows Wadhwa to teach this claim limitation with the above cited data relationship attributes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Wadhwa's data model including data relationship attributes with Wright's software platform. One of ordinary skill would have been motivated to provide a data model that can be readily re-used in subsequent applications (Wadhwa column 7 lines 16-18).

Wright does not expressly disclose *wherein the mobile data model is ...decoupled from a particular interface and enterprise data source*. However, in an analogous environment, Bowman-Amuah teaches that it is important to decouple a data model. See Bowman-Amuah column 236 lines 51-56

Many additional factors influence the detailed design of this communication mechanism. Some systems support volatile and constantly changing object models, **data models** and data structures. In these systems, flexible, **de-coupled** communication is extremely important.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Bowman-Amuah's teaching of a decoupled data model with Wadhwa's independent data model. One of ordinary skill would have been motivated to use a shared format that decouples the model in order to efficiently handle changes to the system (Bowman-Amuah column 237 lines 7-9).

As per claim 2, the above rejection of claim 1 is incorporated. Wright further discloses: *wherein the consumer comprises a distributed computing device* (column 2 lines 38-42).

As per claim 3, the above rejection of claim 1 is incorporated. Wright further discloses: *initiating deployment of the mobile software application and the at least a portion of the mobile data model to a plurality of distributed computing devices* (column 2 lines 32-34).

As per claim 4, the above rejection of claim 1 is incorporated. Wright further discloses: *using the mobile data model to create a domain data store in a middle tier server* (column 2 lines 56-57).

As per claim 5, the above rejection of claim 1 is incorporated. Wright further discloses: *wherein a first consumer receiving the mobile software application can access and update data instances in the domain data store using the at least a portion of the mobile data model* (column 4 lines 38-49).

As per claim 6, the above rejection of claim 1 is incorporated. Wright further discloses: *wirelessly deploying the mobile software application to a first consumer* (column 5 lines 40-41; also column 4 lines 2-4; also column 11 lines 16-17).

As per claim 7, the above rejection of claim 1 is incorporated. Wright further discloses: *developing a distribution rule that identifies a group of consumers; and initiating deployment of the mobile software application to the group of consumers* (column 11 lines 10-17).

As per claim 8, the above rejection of claim 1 is incorporated. All further limitations have been addressed in the above rejections of claims 3, 4, and 5.

As per claim 9, the above rejection of claim 1 is incorporated. All further limitations have been addressed in the above rejections of claims 2, 3, and 6.

As per claim 10, the above rejection of claim 9 is incorporated. Wright further discloses: *wherein the first consumer comprises a group of mobile workers sharing a job description* (column 4 lines 17-21).

As per claim 11, Wright discloses:

A system for application development in a mobile domain (Figure 2), *comprising:*
a middle tier server; a domain data store maintained in the middle tier server, the domain data store representing enterprise information maintained in an enterprise back end column 6 lines 27-33:

The FormLogic Server 132 serves as a "gateway" between FormLogic Clients (e.g., 136, 142, 146) and enterprise data sources (e.g., 180, 182). The server 132 supports what is known as a multi-tier client/server model in that it creates an intermediate server between the client and the "traditional" or "original" server.

also column 7 lines 45-64:

A service defines the relationship between a client application and an enterprise data source. Examples of services include Mail, World Wide Web Gateway, or Inventory... The service instantiations can be considered as interfaces between the "master" service and the connection.

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Here, the service instantiations represent enterprise information maintained in an enterprise back end, and as such can be interpreted as domain data stores within the middle tier server.);

an application development engine operable to generate instructions that can be deployed to the distributed computing platform and that allow the distributed computing platform to access information within the mobile data store column 4 lines 2-4:

Complete Software Distribution interface allowing developers to programmatically install FormLogic forms, agents and tables during connections”; also column 4 lines 41-43: “This allows portions of databases to be carried into the field where they can be modified and later **synchronized** with the server database.”; also column 5 lines 16-17: “The FL client 136 includes an FL Engine 160 which allows FormLogic applications to execute on a variety of handheld devices”).

Wright does not expressly disclose *a mobile data model ... operable to enable changes in data structure and data handling without requiring programmatic changes in the enterprise back end*. However, in an analogous environment, Bowman-Amuah teaches that a streamed model can be described using meta-data. See Bowman-Amuah column 237 lines 7-13:

In cases like this, it would be better to implement a communication mechanism or "shared format" that can better handle changes to the systems.

Therefore, use a Self-Describing Stream and create a stream that contains message data AND descriptive meta-data. Then use a message language to read the formatting information and meta-data off of the stream

This “Self-Describing Stream” enables changes to a system without requiring programmatic changes since the stream provides all the details regarding its contents through descriptive meta-data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Bowman-Amuah’s teaching of a self-describing stream with Wadhwa’s independent data model. One of ordinary skill would

have been motivated to use a shared format that permits the efficient handling of changes to the system (Bowman-Amuah column 237 lines 7-9).

All further limitations have been addressed in the above rejection of claim 1.

As per claim 12, the above rejection of claim 11 is incorporated. Wright further discloses: *wherein the application development engine is operable to generate object oriented instructions* (column 5 lines 33-36, referencing U.S. Pat. 5,704,029 [incorrectly listed as 5,204,029], shows inherent use of the Newton Script object-oriented language.).

As per claim 13, the above rejection of claim 11 is incorporated. Wright further discloses: *further comprising a graphical user interface (GUI) engine responsive to the application development engine* (column 5 lines 30-33).

As per claim 14, the above rejection of claim 11 is incorporated. Wright further discloses: *a mobile data modeler operable to access the mobile data model* (column 5 lines 33-36: “script engine”); *and*

a graphical user interface (GUI) engine operable to present a developer with an interface for the mobile data modeler to modify the mobile data model (column 5 lines 33-36: “user interface”).

As per claim 15, the above rejection of claim 11 is incorporated. Wright further discloses: *further comprising an enterprise back end system maintaining the enterprise information* (column 4 lines 65-67).

As per claim 16, the above rejection of claim 11 is incorporated. All further limitations have been addressed in the above rejection of claim 6.

As per claim 17, Wright discloses:

a memory associated with the distributed computing platform, the memory storing a mobile data store comprising information indicative of information in an enterprise backend (column 5 lines 18-20: The Apple MessagePad Model 120 inherently comprises memory).

All further limitations have been addressed in the above rejections of claims 1 and 11.

As per claim 18, the above rejection of claim 17 is incorporated. All further limitations have been addressed in the above rejection of claim 1.

As per claim 19, the above rejection of claim 18 is incorporated. Wright further discloses: *wherein the mobile application comprises user task specific routines* (column 6 lines 46-59).

As per claim 20, the above rejection of claim 18 is incorporated. Wright further discloses: *wherein the mobile application comprises user specific routines* (column 7 lines 45-53).

As per claim 21, the above rejection of claim 20 is incorporated. Wright further discloses: *wherein the user specific routines are specific to a first user of the distributed computing platform, the system further comprising: a second mobile application that comprises a second set of specific routines for a second user of the distributed computing platform* (column 10 line 66 – column 12 line 19).

As per claim 22, Wright discloses:

establishing a first communication link with a mobile computing device; disconnecting the first communication link; establishing a second communication link with the mobile computing device; and receiving transaction data across the second communication link, the transaction data resulting from execution of the client-side application by the mobile computing device at least a portion of the execution occurring after disconnecting the first communication link and before establishing the second communication link column 5 lines 52-58:

Upon connection, this local database 172 is automatically manipulated by the FL server 132. The FL server 132 can query the client database 172, add data to the client database, or remove data from the client database in order **make updates** to both the client and server databases to reflect **changes** that have happened on both sides **since the last connection**.

Wright does not expressly disclose *the mobile data model ... capable of independently describing key details required by a client-side application*; However, in an analogous environment, Bowman-Amuah teaches that a streamed model can be described using meta-data. See Bowman-Amuah column 237 lines 7-13:

In cases like this, it would be better to implement a communication mechanism or "shared format" that can better handle changes to the systems.

Therefore, use a Self-Describing Stream and create a stream that contains message data AND descriptive meta-data. Then use a message language to read the formatting information and meta-data off of the stream

This "Self-Describing Stream" enables changes to a system without requiring programmatic changes since the stream provides all the details regarding its contents through descriptive meta-data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Bowman-Amuah's teaching of a self-describing stream with Wadhwa's independent data model. One of ordinary skill would have been motivated to use a shared format that permits the efficient handling of changes to the system (Bowman-Amuah column 237 lines 7-9).

All further limitations have been addressed in the above rejection of claim 1.

As per claim 23, the above rejection of claim 22 is incorporated. Wright further discloses: *deriving a first mobile data model from an enterprise information system; and modifying the first mobile data model to yield the deployable mobile data model* (column 4 lines 38-43).

As per claim 24, Wright discloses:

A method for application development and deployment (column 6 lines 34-38:

The FL Builder (not shown) is a development tool, previously described in applicant's copending patent application, now U.S. Pat. No. 5,704,029, used to build FormLogic applications that can be executed on a variety of hardware platforms.

adding at least a portion of the mobile data model to a package Developing a

mobile data model is inherent to adding it to a package, otherwise there would be nothing to add; see column 6 lines 63-64:

Communications agents, also just known as "agents", are developed to describe the communications "session". Communications agents know how to connect to a particular host, perform a set of operations or tasks, which usually includes synchronizing the host data source, e.g., 180, with the client database 172, and then disconnecting. The idea is that a developer can create a communications agent that represents each of the communications sessions that a field user may need.

Here, the mobile data model is evidenced by the set of operations that make up an agent.

An agent here is considered to be equivalent to a package. In order for the agent to operate on the host data source, it must inherently use a data model, otherwise it would not be able to find or distinguish the data contained therein.

including the package in a mobile user application column 7 lines 21-23:

An exemplary Session1 200 called Daily Connect includes three tasks: Task1 204, e.g., GetMail; Task2 206, e.g., SendMail; and Task3 208, e.g., UpdateInventory.

deploying the mobile user application to a distributed computing device See

column 4 lines 2-4 as cited above in the rejection of claim 11.

All further limitations have been addressed in the above rejection of claim 1.

As per claim 25, the above rejection of claim 24 is incorporated. Wright further discloses: *including at least an integration portion of the mobile data model in an application comprising an integration component* (column 6 lines 49-56; An integration

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component inherent to a the “retrieve work order” session described in this passage.

Without an integration component, a new work order would not be able to be examined.).

As per claim 26, the above rejection of claim 24 is incorporated. Wright further discloses: *wherein the mobile user application is operable to colonize the distributed computing device and initiate the instantiation of a data store on the distributed computing device, the instantiation described by the at least a portion of the mobile data model added to the package* (column 4 lines 38-43).

Conclusion


22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Derek Rutten whose telephone number is (571)272-3703. The examiner can normally be reached on T-F 6:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571)272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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jdr



TUAN DAM
SUPERVISORY PATENT EXAMINER